

Remarks

Summary of Office Action

The Examiner objected to the drawings under 37 C.F.R. § 1.83(a) as not showing every feature of the invention specified in the claims.

The Examiner alleged that FIGS. 1-4 illustrate only that which is old and required that the drawings be designated by a legend such as —Prior Art—.

The Examiner objected to the abstract of the disclosure as being in improper format and as not fulfilling the requirements of MPEP § 608.01(b).

The Examiner objected to the disclosure as not showing a prior continuation application.

The Examiner stated that references identified in the specification and not included on a form PTO-892 will not be considered unless identified as required by 37 C.F. R. § 1.98(b).

The Examiner required amendment of the specification to include material that was allegedly improperly incorporated by reference. The Examiner further required that the amendment be accompanied by an affidavit stating that the amendatory material consists of the same material incorporated by reference in the referencing application.

The Examiner objected to claims 4-6 and 17-19 under 37 C.F.R. § 1.75(c) as being in improper dependent form.

The Examiner alleged that the Declaration does not fulfill the requirements of 37 C.F.R. § 1.63(c).

The Examiner rejected claims 1-22 under 35 U.S.C. 102(e) as being anticipated by MacDonald, et al. U.S. Patent No. 6,206,108 (hereinafter, “MacDonald”).

Summary of Applicants' Reply

Applicants have amended the drawings to include new FIG. 5.

Applicants respectfully traverse the objections to FIGS. 1-4.

Applicants have amended the Abstract of the Disclosure.

Applicants have amended the specification to include a reference to an earlier-filed application, the benefit of which is claimed under 35 U.S.C. § 120, and to conform the application to the addition of FIG. 5.

Applicants have amended claims 2, 4, 15 and 17.

Applicants submit concurrently herewith a substitute declaration.

Applicants respectfully traverse the Examiner's claim rejections based on a cited reference.

Applicants have added claims 23 and 24, which define inventive subject matter that applicants regard as theirs.

Reply to the Objections to the Drawings

The Examiner objected to the drawings under 37 C.F.R. § 1.83(a) as not showing every feature of the invention specified in the claims.

Applicants have added new FIG. 5 to illustrate an example of a process for estimating a formation property. The addition of FIG. 5 introduces no new matter. The subject matter of FIG. 5 is supported by the specification – for example, by features recited in claim 1, which is part of the specification. Applicants respectfully submit that the addition of FIG. 5 overcomes the Examiner's objection under 37 C.F.R. § 1.83(a).

The Examiner alleged that FIGS. 1-4 illustrate only that which is old and required that those FIGS. be designated as Prior Art. Applicants respectfully assert that FIG. 1 does not illustrate only that which is old, because FIG. 1 illustrates a new method for establishing the time of origin of source signal 20 when source signal 20 is derived from a passive source. See, for example, specification at p. 11, ln. 21-29. Applicants respectfully assert that FIG. 2 does not illustrate only that which is old, because FIG. 2 illustrates data in a more convenient manner than has been presented in the past. See, for example, specification at p. 14, ln. 23. Applicants respectfully assert that FIG. 3 does not illustrate only that which is old, because FIG. 3 illustrates results in a more simplified manner than has been presented in the past. See, for example, specification at p. 15, ln. 18-19. Applicants respectfully assert that FIG. 4 does not illustrate only that which is old, because FIG. 4 illustrates data that were produced in connection with the invention.

For at least the foregoing reasons, applicants respectfully request that the objections to FIGS. 1-4 be withdrawn.

Reply to the Objections to
the Abstract of the Disclosure

The Examiner objected to the abstract of the disclosure as being in improper format and as not fulfilling the requirements of MPEP § 608.01(b).

Applicants have amended the Abstract of the Disclosure to conform the Abstract to the Guidelines For the Preparation of Patent Abstracts set forth in MPEP § 608.01(b). Applicants respectfully submit that the amended Abstract of the Disclosure, which introduces no new matter, overcomes the objection.

Reply to the Objections to the Specification

The Examiner objected to the disclosure as not showing a prior continuation application.

In the specification, applicants have amended the first paragraph beginning on page 1, immediately following the Title, to add a reference to U.S. Application No. 09/973,529, filed October 9, 2001, from which applicants claim the benefit of priority under 35 U.S.C. § 120 and to state that Application No. 09/973,529 is incorporated by reference in the instant application. (Applicants respectfully note that the incorporation by reference was effected by a statement in the transmittal letter that was filed concurrently with the instant application.)

To conform the application to the addition of FIG. 5, applicants have added a new paragraph at page 6, immediately after the paragraph that begins, "Figure 4 shows measurement data . . ." to provide a brief description of FIG. 5. Applicants also have added a new paragraph at page 20, immediately before the paragraph that begins, "It should be understood that the preceding is merely . . ." to describe FIG. 5.

Applicants respectfully submit that the foregoing amendments, which introduce no new matter, overcome the Examiner's objections to the specification.

Incorporation by reference

The Examiner stated that:

...incorporation of essential material in the specification
by reference to a...publication is improper.

For example in the specification the applicant states that
one embodiment of the invention as found on page 14
of the specification is a step and a simplification of the

detailed data as found in the published literature by O'Hara 1985. Similar references are made to other prior art publications and are found in the specification...

Office action, sec. 6 (emphasis in original).

The Examiner required that the specification be amended to include the "material incorporated by reference" and provide an affidavit stating that the amendatory material consists of the same "material incorporated by reference" in the application. Office action, sec. 6.

Applicants respectfully assert that nowhere—either at p. 14 or elsewhere—does the specification state or imply that an embodiment of the invention is a "step [or] a simplification" of any subject matter shown in O'Hara, 1985. The specification states that "Figure 2...is a simplification of detailed data in the published literature." Specification at p. 14, ln. 17-21. The applicants' invention provides a method for detecting changes in pore pressure based on a relationship between pore pressure and frequency-dependence of received signal attenuation. See, e.g., specification at p. 15, ln. 6-8. Figure 2 discloses one example of such a relationship that may be used to practice the embodiment. O'Hara, 1985 (and O'Hara, 1989) are cited to identify sources from which the applicants derived the Figure 2 relationship, but one practicing the applicants' invention would not be required to derive the relationship.

The specification teaches (beginning at p. 17, ln. 24) the use of a natural relationship between pore pressure and the ratio V_p/V_s . The specification uses an exemplary natural relationship (for Labette Shale, as shown in Figure 4) to teach a principle of the inventive embodiment and cites the relationships derived by Christensen and Wang, 1985, and Hamilton, 1979, as exemplary substitutes for the Figure 4 relationship should it be desired to use the inventive embodiment in connection with a different rock type. Specification at p. 17, ln. 29 - p. 18, ln. 20. Thus, one practicing the applicants' invention might elect to obtain a publicly available relationship such as one of those made available by Christensen and Wang, 1985, and Hamilton, 1979, but would not be required to derive any relationships.

In view of the foregoing remarks, applicants respectfully request that the Examiner withdraw the Examiner's requirement that the specification be amended.

Reply to Claim Objections

The Examiner objected to claims 4-6 and 17-19 under 37 C.F.R. 1.75(c) as being in improper dependent form.

Claims 5-6 depend on claim 4, which depends from claim 1. Claims 17 -18 depend directly from claim 1. Claim 19 depends from claim 18. Applicants have amended claims 4 and 17 to recite “computing a frequency dependent characteristic”, for which antecedent basis is present in claim 1. Applicants respectfully submit that the amendments overcome the objections to independent claims 4 and 17, and to claims 5 and 6, which properly depend from claim 4.

The Examiner alleged that claims 18 and 19 depend on claim 17 and are in improper form. Applicants are unaware of any reason that claims 18 and 19 are improper and respectfully invite the Examiner to explain the allegation or withdraw the objections to claims 18 and 19.

Applicants have amended claims 2 and 15 to define inventive subject matter that applicants regard as theirs.

The amendments of the claims introduce no new matter.

Submission of Substitute Declaration

The Examiner alleged that the Declaration filed concurrently with the application does not fulfill the requirements of 37 C.F.R. § 1.63(c) because the “oath, declaration or application data sheet does not acknowledge the filing of any foreign application.” Applicants believe that 37 C.F.R. § 1.63(c) requires that a foreign priority document be so acknowledged when an applicant seeks the benefit of priority based on the document. Because applicants do not seek such benefit, applicants respectfully submit that the declaration does fulfill the requirements of 37 C.F.R. § 1.63(c). Nonetheless, applicants are submitting herewith a Submission of Substitute Declaration and Request for Retention of Patent Application Assignment that is accompanied by a new declaration that identifies applications for which applicants have claimed benefit.

Reply to Claim Rejections
under 35 U.S.C. § 102

The Examiner rejected claims 1-22 under 35 U.S.C. § 102 as being anticipated by MacDonald. Claim 1 is independent and claims 2-19 depend either directly or indirectly from claim 1. Claims 20-22 are independent.

With respect to claim 1, the Examiner alleged that MacDonald “discloses the limitation of ‘computing a frequency dependent characteristic of [a] receiver signal’” and “further discloses the limitation of ‘using said frequency dependent characteristic to estimate a property of a formation in the region of said bottom hole assembly’.” Office action at p. 7, para. c-d (emphases in original). The Examiner cited MacDonald FIGS. 1 and 9-10A and the specification at 5:30-35 and 21:38-43.

Applicants respectfully submit that neither the cited portions of MacDonald nor any other portions of MacDonald show a frequency dependent characteristic of a receiver signal and therefore do not show “computing” the characteristic, as was alleged in para. c, or “using” the characteristic, as was alleged in para. d, for estimating a property of a formation or for any other purpose. Applicants therefore respectfully submit that for at least the foregoing reasons MacDonald does not anticipate claim 1 and respectfully request that the Examiner’s rejections of claims 1 and 2-19, which depend directly or indirectly from claim 1, be withdrawn.

With respect to claim 20, and claims 21-22, to which the following remarks apply by analogy, the Examiner alleged that MacDonald “discloses the limitation of ‘using said source and receiver signal to estimate a pore pressure of a formation’.” Office action at p. 11, second para. The Examiner supported the rejections by citing MacDonald col. 5:30-35 “in combination” with the MacDonald FIG. 1 system and by stating that MacDonald discloses signal 792 (MacDonald FIG. 9) and receiving a source signal 782 (MacDonald col. 21:38-43).

Applicants respectfully submit that while MacDonald at 5:30-35 teaches a bottom hole assembly that includes sensors that “provide characteristics of the formations”, that “[s]uch parameters”, assuming that they refer to the “characteristics”, include “formation porosity”, and that MacDonald FIG. 9 and col. 21, ln. 38-43 show reflecting acoustic energy off of a formation, MacDonald does not show “using [a] source signal and [a] receiver signal to estimate a pore pressure”, as required by claim 20. In fact, applicants respectfully note that MacDonald

nowhere uses the term "pore pressure." Applicants therefore respectfully submit that for at least the foregoing reasons MacDonald does not anticipate claim 20, or by analogy claims 21-22, and respectfully request that the Examiner's rejections of claims 20-22 be withdrawn.

Conclusion

Applicants respectfully submit that the Examiner's objections to the drawings, Abstract of the Disclosure, specification, claims and Declaration, and the Examiner's rejections of the claims, have been overcome, that claims 1-24 are patentable and that this application is in condition for allowance.

Applicants respectfully request a prompt and favorable action.

Respectfully submitted,

A handwritten signature in black ink, appearing to be "Eric C. Woglom", written over a horizontal line.

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Amendments of the Drawings

The attached drawing sheet includes a new FIG. 5. The sheet is being added to originally filed sheets 1-3.

Attachment: drawing sheet